

The effect of Internet-Specific Parenting Practices on the Intensity of Social Media Use of Dutch Adolescents: The Moderating Role of FoMO

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Abstract

Previous studies have investigated the effect of internet-specific parenting practices on problematic social media use. However, it is unknown whether internet-specific parenting practices – specifically internet-specific rule-setting (ISRS) and reactive restrictions (RR) – can decrease social media use intensity (SMU intensity). Therefore, this longitudinal study investigated the relationship between ISRS and RR on SMU intensity among Dutch adolescents. Additionally, the moderating role of Fear of Missing Out on these relationships was examined. Data from the Digital Youth Project (DiYo), in which adolescents participated in a questionnaire study conducted at secondary schools, were used. This study included two measurement waves with a 1-year interval between waves. The final sample consisted of 1327 participants between ages 11 and 17 years old, with a mean age of 13.61 years ($SD = 1.18$). Results showed that ISRS significantly predicted a decrease in SMU intensity over time, whereas no significant effect was found for RR. FoMO did not significantly moderate the relationship between both these internet-specific parenting practices and SMU intensity. These findings highlight the complexity of managing adolescents' social media use and suggest that while parental rule-setting can be effective, this does not seem to be the case for in-the-moment restrictions. Further research is needed to explore additional moderating variables and develop comprehensive strategies for reducing excessive social media use among adolescents.

Keywords: internet-specific parenting practices, internet-specific rule-setting, reactive restrictions, social media use intensity, Fear of Missing Out

Samenvatting

Eerdere studies hebben het effect van internetspecifieke opvoedpraktijken op problematisch gebruik van sociale media onderzocht. Het is echter onbekend of deze opvoedpraktijken – specifiek internetspecifieke regels (ISRS) en reactieve beperkingen (RR) – de intensiteit van het gebruik van sociale media (SMU-intensiteit) kunnen verminderen. Deze longitudinale studie onderzocht de relatie tussen ISRS en RR en de SMU-intensiteit onder Nederlandse adolescenten. Daarnaast werd de modererende rol van Fear of Missing Out (FoMO) op deze relaties onderzocht. Hiervoor werden data van het Digital Youth Project (DiYo) gebruikt, waarbij adolescenten deelnamen aan een vragenlijstonderzoek dat werd uitgevoerd op middelbare scholen. Deze studie gebruikte twee meetmomenten, met een interval van 1 jaar tussen de meetmomenten. De uiteindelijke steekproef bestond uit 1327 jongeren tussen de 11 en 17 jaar oud, met een gemiddelde leeftijd van 13,61 jaar ($SD = 1,18$). Resultaten laten zien dat alleen ISRS een significante afname in SMU-intensiteit op een later moment voorspelde, terwijl er voor RR geen significant effect werd gevonden. Bovendien was het modererende effect van FoMO op de relatie tussen beide internetspecifieke opvoedpraktijken en SMU-intensiteit niet significant. Deze bevindingen benadrukken de complexiteit van het beheersen van het sociale mediagebruik van adolescenten en suggereren dat, hoewel ouderlijke regels stellen effectief kan zijn, dit niet het geval lijkt te zijn voor reactieve beperkingen op het moment zelf. Verder onderzoek is nodig om aanvullende modererende variabelen te identificeren en om uitgebreide strategieën te ontwikkelen voor het verminderen van overmatig gebruik van sociale media onder adolescenten.

Trefwoorden: internetspecifieke opvoedpraktijken, internetspecifieke regels, reactieve beperkingen, sociale media intensiteit, Fear of Missing Out

Introduction

For today's youth, having grown up as 'digital natives', life without social media is almost unimaginable (Bohnert & Gracia, 2020). In 2019, 96.8% of 12-24-year-olds in the Netherlands were active on a minimum of one social media platform (CBS, 2020). While social media offers potential benefits for youth development (Lee & Horsley, 2017), research has also found negative impacts on users' well-being, such as low self-esteem (Woods & Scott, 2018), social isolation (Whaite et al., 2018), anxiety and depression (Karim et al., 2020). Research distinguishes between intensity of social media use (SMU intensity) and problematic social media use (PSMU). SMU intensity use refers to how often people use social media platforms (Boer et al., 2021), whereas PSMU often highlights behaviors or symptoms associated with addiction (Mieczkowski et al., 2020). This study focuses on SMU intensity, but, due to a lack of research on this type of media use, will draw upon existing literature on PSMU as well.

With the rise of social media and the negative consequences that social media use can have on its users, parents increasingly worry about the mental health of their children, and are interested in ways to reduce their social media use (Geurts et al., 2023). Internet-specific parenting practices (parenting practices that aim to regulate social media use or internet use specifically (Vossen et al., 2024)) are expected to play a role in preventing and/or reducing adolescents' social media use (Geurts et al., 2023). Parents can for example set rules about social media use (*internet-specific rule-setting (ISRS)*) or can actively intervene when adolescents are engaged in social media use (*reactive restrictions (RR)*) (Vossen et al., 2024). Research on the effects of ISRS and RR on social media use has only found small and often inconsistent findings (Geurts et al., 2023), although it should be noted that research on this topic has focused on PSMU rather than SMU intensity.

One of the possible explanations for these inconsistent findings could be that person

factors play a role in the strength of the relationship between internet-specific parenting practices and social media use. An example of a person factor possibly influencing this relationship is Fear of Missing Out (FoMO). FoMO, characterized by the desire to stay continually connected with what others are doing, and distress regarding the possibility that others are having enjoyable experiences in one's absence (Pryzbylski et al., 2013), has been associated with a range of negative consequences, such as anxiety and lack of sleep (Gupta & Sharma, 2021). FoMO has also been positively associated with social media intensity, and it is argued that FoMO encourages the use of social media in order to stay connected with peers (Roberts & David, 2019).

A gap in the literature exists regarding the effect that parents' ISRS and RR actually have on the ISMU of their children (Morgan & Kristjánsson, 2017). Although there is some research available on PSMU and the relationship between ISRS and SMU intensity, effects of RR on SMU intensity specifically have not yet been studied. Additionally, there is a lack of research on how person factors, such as FoMO, can influence the impact these parenting behaviors have on adolescents SMU intensity. Therefore, this study aims to answer the following research question:

To what extent do internet-specific rule setting (ISRS) and reactive restrictions (RR) by parents predict the intensity of social media use among Dutch adolescents, and to what degree is this relationship moderated by fear of missing out (FoMO)?

The role of internet-specific parenting

Parents are able to influence adolescents' behavior through certain parenting practices. Parenting practices in relation to online behavior are often referred to as internet-specific parenting practices (Koning et al., 2018). These practices may help adolescents use social media in a responsible and healthy way, for example by restricting adolescents' social media use (Beyens et al., 2022). The literature distinguishes between two types of internet-specific

parenting practices, namely parental monitoring and parental mediation. Parental monitoring refers to parents' actions to keep track of their child's social media use, including when and how much time they spend on social media platforms (Beyens et al., 2022). Parental mediation concerns the steps that parents take to limit the time their teenagers spend using social media (Beyens et al., 2022). Geurts et al. (2022) distinguish between active mediation practices (e.g. communication about internet use) and restrictive mediation practices (e.g. rule-setting). In this thesis, two restrictive mediation practices will be examined: internet-specific rule-setting (ISRS) and reactive restrictions (RR). Internet-specific rule-setting refers to rules that parents set regarding social media use, while reactive restrictions concern active intervening when adolescents are engaged in social media use (Vossen et al., 2024).

As stated before, research on the effects of internet-specific parenting practices on SMU intensity is scarce, and most research concerning the effectiveness of these practices focuses on PSMU instead. For example, a longitudinal study by Koning et al. (2018) found that internet-specific rules predicted fewer symptoms of PSMU one year later among girls, but not boys. Additionally, while some studies did find negative relationships between internet-specific rules and time spent online, other studies did not reveal the same results (Van den Eijnden et al., 2021). For example, a cross-sectional study by Kalmus et al. (2015) found that rule-setting was correlated with less social media use, whereas cross-sectional research by Daud et al. (2014) found no significant association between the two. In short, literature on the effectiveness of ISRS and RR on PSMU is inconsistent, although a review by Vossen et al. (2024) found some evidence that internet-specific rules may help to prevent PSMU, whereas reactive restrictions seem to work counterproductive. This review included both cross-sectional and longitudinal studies, and the associations between ISRS and RR and PSMU were also established longitudinally (Vossen et al., 2024).

Since adolescents who use social media problematically also tend to display a higher

intensity of social media use (Boer et al., 2021), it can be expected that the effects of internet-specific parenting practices on social media use will mirror those observed for problematic use. It should be noted, however, that this may to a lesser extent be the case for reactive restrictions, as this could stimulate reactance. Research on this is mostly focused on PSMU, which differs from SMU intensity in the sense that PSMU highlights behaviors or symptoms associated with addiction. It might be possible that reactive restrictions will be more effective in preventing SMU intensity, as compared to PSMU, as adolescents users are less likely to experience significant psychological distress or compensatory behaviors when confronted with reactive restrictions when they did not develop symptoms of PSMU. They might find it easier to adapt to the imposed limits, leading to a straightforward reduction in the frequency of their social media use. When it comes to ISRS, specifically, Geurts et al. (2022) propose that the effectiveness of internet-specific rules could be contributed to the development of effective self-control. This, in turn, may help adolescents to control their SMU use, resulting in a lower intensity of their social media use at a later time (Vossen et al., 2024). Additionally, both internet-specific parenting practices may directly limit adolescents' opportunities to use social media, for example by implementing rules and hereby restricting the time spent on social media. Therefore, it is hypothesized that adolescents who experience more ISRS and RR will engage in lower levels of ISMU.

H1: Parents' reactive restrictions (RR) negatively predict subsequent intensity of social media use (ISMU) among adolescents.

H2: Internet-specific rule setting (ISRS) by parents negatively predicts subsequent intensity of social media use (ISMU) among adolescents.

The role of Fear of Missing Out (FoMO)

Fear of Missing Out (FoMO) is defined by Przybylski et al. (2013) as 'a pervasive apprehension that others might be having rewarding experiences (e.g. activities) from which

one is absent'. People who experience high levels of FoMO feel the need to be constantly connected with others (Li et al., 2024). This need, often referred to as relatedness, is a basic psychological need contributing to individuals' well-being. According to the Self-Determination Theory (SDT), relatedness is particularly important for adolescents (Ryan & Deci, 2012). During adolescence, young people tend to spend more time with peers of their own age and place increasing value on their opinions. Therefore, it is expected that when adolescents experience higher levels of FoMO, they will have a stronger urge to stay connected with their peers. According to Li et al. (2024), adolescents may be inclined to use social media more frequently in an effort to fulfill the psychological need for relatedness and reduce their feelings of FoMO. Research on this topic seems to support this idea.

Correlational research has for example shown that there is a positive relationship between FoMO and social media intensity (Roberts & David, 2019; Anwar et al., 2019; Baker et al., 2016). Additionally, longitudinal research has identified FoMO as a predictor of the use of social media platforms such as Facebook (Beyens et al., 2016) and Instagram (Salim et al., 2017), and also predicted how frequently teenagers use several social media platforms (Franchina et al., 2018). Overall, the existing literature suggests that FoMO is not only associated with but can also predict time spent on social media and SMU intensity.

In this study, it is hypothesized that FoMO can act as a moderator of the relationship between the internet-specific parenting practices (internet-specific rule-setting and reactive restrictions) and ISMU. The strong motivation of knowing what peers are doing is the key element of FoMO, promoting individuals' constant checking of social media in order to avoid missing information (Niu et al., 2022). Additionally, during adolescence, as peers become the most important source of social support, young people rely more and more on their peers and less on their parents (Beyens et al., 2016). Social media platforms provide excellent tools for adolescents to fulfill their need to belong and get social support. Based on SDT, it is expected

that adolescents will feel more inclined to use social media to fulfill their need to be constantly connected to others (Beyens et al., 2016) when they experience higher levels of FoMO. In that sense, FoMO can be seen as a failure of self-regulation, as users cannot control the overwhelming urge to use social media continually to meet their needs (Niu et al., 2022), irrespective of their parents' restrictions. Consequently, it is expected that among adolescents who experience higher levels of FoMO, the impact of both internet-specific parenting practices is weaker compared to adolescents who experience lower levels of FoMO.

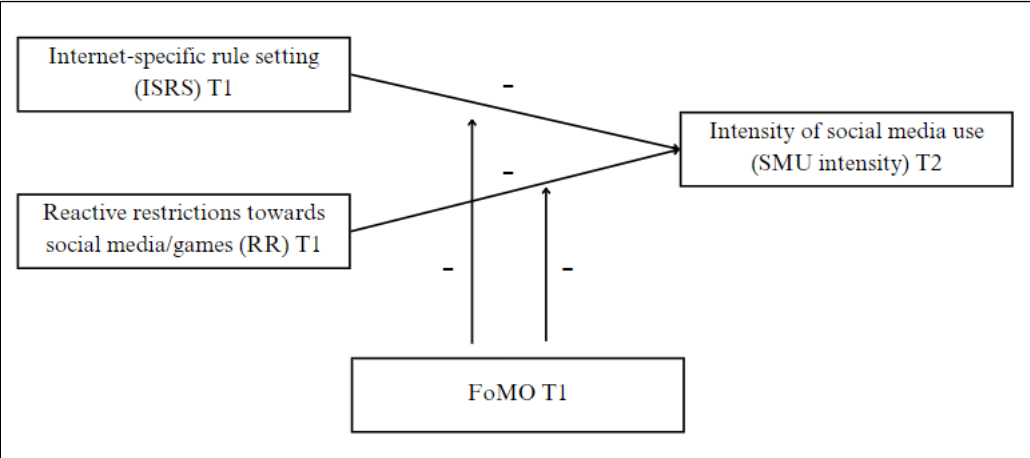
H3: The negative relationship between internet-specific rule setting (ISRS) and subsequent intensity of social media use (ISMU) is weaker when adolescents experience more FoMO.

H4: The negative relationship between reactive restrictions towards social media/games (RR) and intensity of social media use (ISMU) is weaker when adolescents experience more FoMO.

A visual representation of the relationship as stated in the hypotheses can be found in Figure 1.

Figure 1

Visual Representation of the Hypotheses



Methods

Design and participants

The current study investigated the effectiveness of internet-specific parenting practices on intensity of social media use. To do so, this study used data from the Digital Youth project (DiYo), a longitudinal study about online behavior and mental health among secondary school students in the Netherlands. The data were collected through an online self-report questionnaire and contained five waves from 2015 to 2019. In the present study, data from the third (2017) and fourth (2018) wave were used, further referred to as T1 and T2 respectively.

T1 contained 2708 participants (46.1% boys, 53.9% girls) with a mean age of 13.94 (SD = 1.20; range 11-17). In the current study, only participants who participated in both T1 and T2 were included in the regression analysis. The final sample consisted of 1327 participants (49,7% boys, 50,3% girls) with a mean age of 13.61 years (SD = 1.18; range 11-17) at T1, and a mean age of 14.70 (SD = 1.20; range 12-18) at T2. Nonresponse was mainly due to class withdrawal, as some teachers were unable to schedule the assessments at participating schools, or were absent during the measurement days.

Finally, an attrition analyses was conducted to examine differences between participants who dropped out and participants who participated in both waves. Significant differences were found within the variable of sex ($t(2682.91) = 2.53; p < .012$), SMU intensity at T1 ($t(2667.46) = -5.53; p < .001$), internet-specific rule-setting ($t(22458.95) = -7.22; p < .001$), and reactive restrictions ($t(2505.64) = 4.10; p < .001$). Adolescents who dropped out were younger, more likely to be male, have higher levels of SMU intensity, experience higher levels of internet-specific rule-setting and experience lower levels of reactive restrictions than those who participated in both waves.

Procedure

Prior to the study, both parents and their children were fully informed about the purpose and

topic of the study, and were informed that participation was voluntary and anonymous. Parents were able to refuse their child's participation, and the children themselves were ensured that they had the right to refuse participation or withdraw at any point. This research has been approved by the ethical board of the Faculty of Social Sciences at Utrecht University and complies with ethical guidelines (FETC16-075 Eijnden). For this study, ethical approval was again granted (FETC24-1231 Kernebeek).

Measurements

Social Media Intensity

SMU intensity was measured using six items measuring active and passive social media use. Respondents rated how often they passively used social media (by looking at social media sites) and how often they actively participated in social media (by posting or liking social media posts and messages, or responding to them) in one week. Answers ranged from 1 = 'never or less than once a week' to 7 = 'more than 40 times a week'. Additionally, adolescents rated how often they passively used social media on their smartphone (by looking at messages, videos or photos) and how often they actively used social media on their smartphone (by sending messages, videos or photos themselves). Answers ranged from 1 = 'less than once a day' to 7 = 'more than 80 times a day'. A mean score of all six items was calculated, with higher scores representing a higher intensity of social media use. Cronbach's alpha for this scale was .839 at T1 and .810 at T2.

Internet-specific Parenting Practices

For internet-specific rules, participants were asked to what extent their parents (or caregivers) allowed them to do certain internet-related things on regular school days (Geurts et al., 2022). Examples of behaviors include using the internet or gaming if the participant hadn't finished their homework, or using the internet in the hour before the participant would go to sleep. Responses were recorded using a Likert scale ranging from 1 = "never" to 5 = "very often" for

each of 9 items, and were reverse coded, so that higher mean scores represented more strict parental rules about internet use. Cronbach's alpha for this scale was .867 at T1.

For reactive restrictions, participants were asked to answer how often their parents would respond in a certain way if the adolescent wanted to game or use the internet (Koning et al., 2018). This included four statements focused on restrictive parental behaviors, for example telling the adolescent to turn off the computer or smartphone, or telling the adolescent that they are not allowed to use the internet. Responses were recorded using a Likert scale ranging from 1 = “(almost) never” to 5 = “more than 5 times a day” for each item. A mean score of the four items was calculated, with higher mean scores representing higher levels of reactive restrictions towards adolescents’ internet use. Cronbach’s alpha was .841 at T1.

Fear of Missing Out (FoMO)

Fear of Missing Out was measured using five items of the Fear of Missing Out scale (Pryzbylski et al., 2013). Respondents rated the extent to which they agreed with five statements on a 5-point Likert scale, ranging from 1 = ‘not correct at all’ to 5 = ‘totally correct’. Examples of statements include ‘*I get worried when I find out my friends are having fun without me*’ and ‘*I get anxious when I don't know what my friends are up to*’. An average score of the five items was calculated, with a higher score meaning the participant experienced higher levels of FoMO. Cronbach’s alpha for this scale at T1 was .826.

Control variables

Research has found that younger individuals expressed higher levels of FoMO than older individuals (Abel et al., 2016). Therefore, age was included as a control variable in this study. Age was measured with one open question: “*What is your age in years?*”. To control for gender, participants answered the question “*What is your gender?*”, with the answer option being either ‘male’ (1) or ‘female’ (2).

Data analysis

In this study, two internet-specific parenting practices (reactive restrictions and internet-specific rule-setting) at T1 were the predictors, and intensity of social media use at T2 was the outcome variable. FoMO at T1 is considered a moderator. Only participants who completed the questionnaire at both T1 and T2 were included in the regression analysis. Mean scores at T1 and T2 for the variables reactive restrictions, internet-specific rule-setting, FoMO and intensity of social media use were calculated. Next, the correlations between the independent variables at T1, dependent variable at both T1 and T2, moderation variable at T1 and the demographic variables age and sex were requested. Before the main analyses were further conducted, the conditions for a multiple linear regression analysis were tested. Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern. The histogram of standardized residuals indicated that the data contained approximately normally distributed errors, as did the normal P-P plot of standardized residuals. Furthermore, the data contained multiple outliers, as shown by boxplots. For some of those outliers, the standardized residual could be considered large (> 3 or < -3). However, none of the outliers had a value for Cook's distance that is large (> 1), meaning that the influence of the outliers on the overall results of the regression analysis is small. Therefore, none of the outliers were deleted before conducting the regression analysis. Finally, a multiple linear regression analysis was performed, with SMU intensity at T2 as dependent variable in step 1, and the control variables age, gender and SMU intensity at T1 as independent variables. To test the direct effect of each of the two parenting practices on SMU intensity at T2, as stated in the hypotheses, the independent variables RR and ISRS were each added separately in step 2. Lastly, RR and ISRS were added to the regression analysis together. Next, to test for the moderating effect of FoMO, the variable FoMO was first added to the regression model, while still controlling for age, gender and intensity of social media use at T1. Then, the

moderating effect of FoMO was tested by adding the interaction term of the independent variable RR and FoMO to the regression model, and repeating this step in a separate regression model with the interaction term ISRS and FoMO. Before the variables were added to the regression model, the variables RR, ISRS and FoMO were centered.

Results

Table 1 shows the descriptive statistics of all relevant variables from the current study.

Table 1

Descriptive Statistics

	M	SD	SE	Min	Max
Social media use intensity T1	3.80	1.34	0.04	1.00	7.00
Social media use intensity T2	3.75	0.50	0.01	1.00	7.00
Internet-specific rule-setting T1	3.35	0.92	0.03	1.00	5.00
Reactive restrictions T1	1.74	0.76	0.02	1.00	5.00
FoMO T1	1.79	0.72	0.02	1.00	5.00

Note: N = 1327

Table 2 shows the correlations between all variables of interest, and also includes gender, age, and SMU intensity at T1. Since age and sex were both significantly correlated with both the dependent variable and one or more independent variables, and could be potential confounders, they were included as control variables in the regression analysis.

For internet-specific parenting practices, internet-specific rule-setting was negatively and significantly correlated with SMU intensity at T2, indicating that adolescents who experience more parental rules regarding social media use reported lower SMU intensity. Reactive

restrictions were negatively related to SMU intensity at T2, but this association was not significant. Furthermore, it was found that FoMO was significantly and positively associated with SMU intensity at T2, indicating that adolescents who experience higher levels of FoMO reported more frequent use of social media.

Table 2

Correlation Matrix

	1	2	3	4	5	6	7
1. Sex T1	-						
2. Age T1	-0.07*	-					
3. Social media use intensity (SMU intensity T1)	0.14***	0.14***	-				
4. Social media use intensity (SMU intensity T2)	0.09**	0.14***	0.66***	-			
5. Internet-specific rule-setting (ISRS) T1	-0.01	-0.30***	-0.29***	-0.25***	-		
6. Reactive restrictions (RR) T1	-0.11***	-0.17***	-0.02	-0.04	0.24***	-	
7. Fear of Missing Out (FoMO)	0.09**	0.12***	0.15***	0.16***	-0.12***	0.11***	-

Note. N = 1327. Pearson correlations were used for ordinal and continuous variables,

Spearman correlations were used for dichotomous variables.

* $p < .05$, ** $p < .01$, *** $p < .001$

The effect of internet-specific parenting practices

A linear regression analysis was used to examine if internet-specific parenting practices predicted intensity of social media use at T2 (Hypothesis 1 and 2). First, the control variables age, gender and SMU intensity at T1 were added to Model 1. Age ($\beta = 0.044$, $p = .034$) and SMU intensity at T1 ($\beta = .655$, $p < .001$) were significant predictors of SMU intensity at T2. The three control variables accounted for a significant 43.8% of the variability in ISMU at T2.

Next, in the second step, the independent variable reactive restrictions (RR) was added to the regression analysis to examine if reactive restrictions at T1 predicted intensity of social media use at T2 (Hypothesis 1). Table 3 shows there was no effect of RR at T1 on SMU intensity at T2 after controlling for gender, age, and SMU intensity at T1. As there was no significant effect of RR on intensity of social media use, Hypothesis 1 was rejected.

Subsequently, it was tested if internet-specific rule-setting at T1 predicted SMU intensity at T2 (Hypothesis 2). In step one, gender, age, and SMU intensity at T1 were again added. Then, in the second step, internet-specific rule-setting (ISRS) at T1 was added to the regression analysis. Table 3 shows that, after controlling for gender, age and SMU intensity at T1, there was a significant negative association between ISRS and SMU intensity at T2 ($\beta = -.057$, $p < .010$). Thus, the second hypothesis that internet-specific rule-setting at T1 would negatively predict social media intensity at T2 was accepted.

Finally, in step 2c, the direct effect of both RR and ISRS on SMU intensity at T2 was tested by adding them to the regression analysis at the same time. In this model, ISRS still negatively and significantly predicted intensity of social media use at T2 ($\beta = -.055$, $p = .016$). These results seem to suggest that parental rules regarding social media use may lead to a decrease in intensity of adolescents' social media use a year later.

Table 3

Linear Regression Analysis of Reactive Restrictions and Internet-Specific Rule-Setting at T1 and Social Media Use Intensity at T2 (N = 1400 in Step 1, N = 1327 in other steps)

<i>Predictor</i>	<i>B</i>	<i>SE</i>	β	<i>p</i> <	ΔR^2
Step 1					0.438***
Gender	-0.003	0.052	-0.001	0.953	
Age	0.047	0.022	0.044	0.034	
SMU intensity ^a T1	0.606	0.019	0.655	<.001	
Step 2a					0.000
RR ^b _T1	-0.034	0.034	-0.021	0.322	
Step 2b					0.003**
ISRS ^c _T1	-0.077	0.030	-0.057	0.010	
Step 2c					0.003**
RR_T1	-0.016	0.035	-0.010	0.643	
ISRS_T1	-0.074	0.031	-0.055	0.016	

* $p < .05$. ** $p < .01$. *** $p < .001$.

^a Social media use intensity; ^b reactive restrictions, ^c internet-specific rule-setting

The moderating role of FoMO

To test for the moderating effect of FoMO, two separate regression analyses were performed. First, to test for the moderating effect of FoMO on the relationship between reactive restrictions and SMU intensity at T2, both reactive restrictions and FoMO were added to the regression model. Table 4 shows that, when controlled for gender, age, and SMU intensity at T1, FoMO was a significant predictor of SMU intensity at T2 ($\beta = .057$, $p = .007$). In step 3, the interaction term of FoMO and RR was added. The interaction effect was only marginally significant ($\beta = .037$, $p = .083$). This marginally significant interaction effect was visualized (see Appendix 1). The graph seems to indicate that adolescents with lower levels of FoMO show relatively consistent SMU regardless of the level of reactive restrictions, whereas

adolescents with higher levels of FoMO seem to use social media more intensively when reactive restrictions are higher.

To test for the moderating effect of FoMO on the relationship between internet-specific rule-setting and intensity of social media use at T2, the variables ISRS and FoMO were added to step 2 of a new regression model. Table 5 shows that, when controlled for gender, age, and SMU intensity at T1, FoMO was again a weak but significant predictor of SMU intensity at T2 ($\beta = .050, p = .016$). In step 3, the interaction term of FoMO and ISRS was added. This interaction was not significant ($\beta = .024, p = .242$), indicating that FoMO does not moderate the relationship between ISRS and SMU intensity at T2. In other words, the effect of parental rule-setting regarding social media use does not significantly differ depending on an adolescents' levels of FoMO.

Table 4

Linear Regression Analysis of FoMO and the Interaction Effect of FoMO and RR on SMU Intensity at T2 (N = 1327)

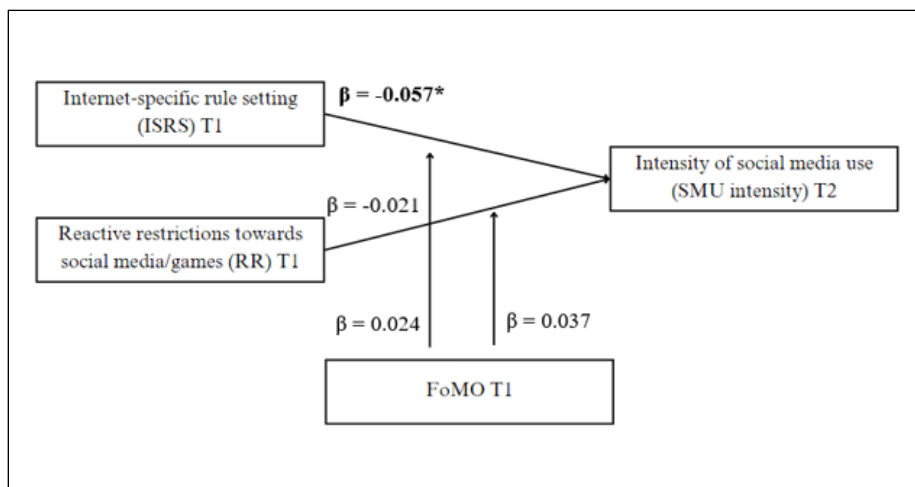
<i>Predictor</i>	<i>B</i>	<i>SE</i>	β	<i>p</i>	ΔR^2
Step 1					0.438***
Gender	-0.003	0.052	-0.001	0.953	
Age	0.047	0.022	0.044	0.034	
SMU intensity ^a T1	0.606	0.019	0.655	<.001	
Step 2					0.004**
RR ^b T1	-0.047	0.034	-0.029	0.168	
FoMO_T1	0.098	0.036	0.057	0.007	
Step 3					0.001
RR * FoMO	0.071	0.041	0.037	0.083	

* $p < .05$. ** $p < .01$. *** $p < .001$.

^a social media use intensity; ^b reactive restrictions

Table 5*Linear Regression Analysis of FoMO and the Interaction Effect of FoMO and ISRS on SMU**Intensity at T2 (N = 1327)*

<i>Predictor</i>	<i>B</i>	<i>SE</i>	β	<i>p</i>	ΔR^2
Step 1					0.438***
Gender	-0.003	0.052	-0.001	0.953	
Age	0.047	0.022	0.044	0.034	
SMU intensity ^a _T1	0.606	0.019	0.655	<.001	
Step 2					0.005**
ISRS ^b _T1	-0.073	0.030	-0.055	0.015	
FoMO_T1	0.086	0.036	0.050	0.016	
Step 3					0.001
ISRS *	-0.045	0.038	0.024	0.242	
FoMO					

* $p < .05$. ** $p < .01$. *** $p < .001$.^a Social media use intensity; ^b internet-specific rule-setting**Figure 2***Visual Representation of Results as Stated in Hypotheses*Note. * $p = .010$

In this figure, the individual effects of ISRS and RR (step 2a and step 2b in Table 2) on SMU intensity have been reported.

Discussion

As far as we know, this is the first study that longitudinally investigated the direct effect of internet-specific parenting practices (reactive restrictions and internet-specific rule-setting, specifically) on adolescent SMU intensity, and also examined whether these relationships were moderated by FoMO. Findings showed that adolescents who experienced more internet-specific rule-setting reported a decrease in SMU intensity one year later. However, increased reactive restrictions did not predict SMU intensity one year later. None of the interaction terms were significant, which implies that the effect of both reactive restrictions and internet-specific rule-setting on SMU intensity does not significantly differ depending on an adolescents' levels of FoMO.

Contrary to Hypothesis 1, that suggested that parents' reactive restrictions would negatively predict subsequent SMU intensity among adolescents, reactive restrictions did not have any significant effect on an adolescent's later SMU intensity. These results are not in line with previous research showing that reactive restrictions were negatively related to Internet use and SMU (Collier et al., 2016; Van den Eijnden et al., 2010). However, results on the effectiveness of RR have been inconsistent (Geurts et al., 2023). Additionally, since this is the first study that investigated the effect of RR on SMU intensity, it is unclear whether these results will be replicated in future studies. In line with the second Hypothesis, the findings of this study suggest that internet-specific rule-setting predicts lower levels of SMU intensity over time. Although little research has studied this relationship, the findings are consistent with some research on problematic social media use. For example, a study by Geurts et al. (2022) found that ISRS was significantly associated with a lower chance of being a problematic social media user. An explanation for the effectiveness of internet-specific rule-setting on SMU intensity could be that those rules contribute to the development of effective

self-control, which may help adolescents control their SMU intensity (Geurts et al., 2022). ISRS could thereby serve as a protective factor by establishing clear rules about social media use, which may help adolescents who might otherwise engage in high levels of social media use to manage their online activities more effectively and avoid intensive use.

Finally, it was hypothesized that FoMO would moderate the relationship between both internet-specific parenting practices and SMU intensity. FoMO was a significant predictor of SMU intensity. The predicted interaction term between FoMO and ISRS, however, was not significant, suggesting that the impact of internet-specific rule-setting on SMU intensity does not seem to differ depending on an adolescents' level of FoMO. However, the interaction term between FoMO and RR was marginally significant, which may suggest that level of FoMO may influence the strength of the relationship between RR and SMU intensity. More specifically, adolescents with higher levels of FoMO seem to use social media more intensively when they experience more reactive restrictions, whereas adolescents with low levels of FoMO seem to show relatively consistent SMU intensity regardless of the level of parental reactive restrictions. This result is in line with Hypothesis 4, that stated that the relationship between RR and SMU intensity would be weaker when adolescents experience more FoMO. Important to note, however, is that the effect size of this interaction was very small. Therefore, future research is necessary to see if similar patterns emerge in other studies.

The present study is based on a large sample and longitudinal data. Although this longitudinal design makes it possible to obtain indications for the directions of a causal relationship, it remains impossible to exclude the possibility that the results are due to variables that were not measured in the study design. Furthermore, this study has some limitations that should be taken into account when interpreting its findings. First of all, the attrition analysis revealed that scores on SMU intensity at T1, internet-specific rule-setting, and reactive restrictions were significantly different between participants participating in both

waves compared to those participating in either wave. This suggests that the sample remaining in the study may not be representative of the initial sample, and results may disproportionately reflect the characteristics of those who stayed rather than those who left. However, as the included variables only explained a small portion of the variance in SMU intensity, the bias introduced by attrition does not seem to be substantial. Secondly, data from adolescents' self-reports were used in this study, which could have led to bias and errors of judgement. As a result, the actual use of social media and internet-specific parenting practices might differ from the answers given by the participants within this study. Therefore, Vossen et al. (2024) propose that more objective instruments, such as observation, might be a useful addition to measure internet-specific parenting practices, as these instruments might more closely resemble the interactions between parents and children than subjective self-reports.

This study tried to fill a gap in the literature that currently exists regarding the effect that parents' internet-specific rule-setting and reactive restrictions actually have on the social media use of their children (Morgan & Kristjánsson, 2017), specifically focusing on SMU intensity. The results of this study seem to indicate that there is a small, protective effect of parents' internet-specific rule-setting (ISRS), whereas there is no effect of reactive restrictions (RR). Additionally, this study looked at an individual factor, FoMO, and its influence on the relationship between ISRS and RR on SMU intensity. Although no significant results were found, a marginally significant interaction warrants further study, as the pattern of results seem to suggest that reactive restrictions might work counterproductive in reducing SMU intensity when an adolescents experience high levels of FoMO. Furthermore, future research should look into the moderating role of other individual factors, as these can contribute to the inconsistency of earlier research findings on the topic of parenting practices and SMU. Aside from the scientific contribution, this study carries significant implications for parents. Online media are widely available, and unlike addictive substances such as alcohol, tobacco and

drugs, or activities like gambling, for which age limits are often applied, social media consumption in children cannot be regulated legislatively (Lukavská et al., 2022). This means that the role that parents play in adolescents' social media consumption is an important influence to consider. The results from this study highlight the importance of structured internet-specific parenting practices rather than in-the-moment restrictions in managing adolescents' SMU intensity.

The present study aimed to investigate the impact of internet-specific parenting practices – specifically, internet-specific rule-setting (ISRS) and reactive restrictions (RR) – on social media use intensity of Dutch adolescents, while also exploring the moderating role of FoMO. The findings revealed that ISRS significantly predicted a reduction in adolescents' SMU intensity over time, suggesting that clear and consistent rules about social media can effectively limit its use, whereas this study found no support for the effectiveness of parental intervening in response to social media use. Additionally, the marginally significant moderation effect of FoMO on reactive restrictions warrants further investigation to fully understand its impact on SMU intensity.

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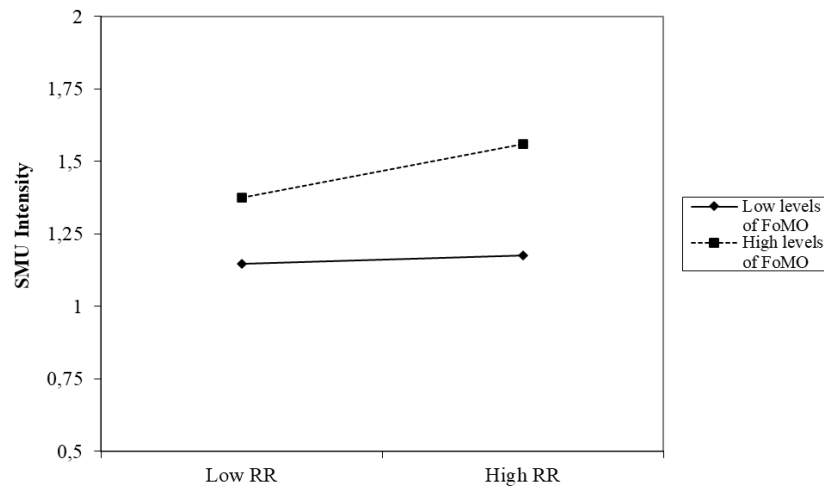
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Appendix 1

Visual Representation of the Interaction Between Reactive Restrictions and FoMO on SMU

Intensity at T2



Note. Slopes are plotted at one standard deviation above and below mean.

Appendix 2 – Reflection on interdisciplinarity

To understand the problem of SMU intensity in relation to parenting practices and FoMO, it is useful to integrate several scientific disciplines, as this problem takes place within a certain context and cannot be fully understood through the lens of a single discipline. Adolescents' SMU intensity is influenced by a multitude of factors operating at different levels and contexts. Therefore, social media use is a complex phenomenon that can – and should - be viewed from different disciplines. When it concerns social media use among adolescents, it is important to look at this issue from both a psychological and sociological perspective, among other perspectives. The psychological aspect shows how individuals might differ in using social media, and how the effectiveness of internet-specific parenting practices might depend on a psychological – and individual – characteristic, in this thesis FoMO. This thesis also draws upon psychological theories (e.g. Self-Determination Theory) to explain how FoMO fits within the relationship between internet-specific parenting practices and SMU intensity. Additionally, sociology can help understand how social norms and family and peer dynamics influence adolescents' social media use, FoMO experiences and the way in which SMU is situated within broader social structures.

This study is not only important to the academic field, as it contributes to the scientific understanding of the effectiveness of internet-specific parenting practices on SMU intensity, but is also important to stakeholders outside academia. Stakeholders that are of particular importance when it concerns this topic, are adolescents and their parents, but also broader contexts such as schools, in which adolescents spend a lot of time with the peers that they use social media with. Parents could benefit from research on internet-specific parenting practice by adopting effective strategies that generate the least resistance from their children, fostering a healthy and balanced approach to SMU.

Furthermore, different research methods can – and should – be used to investigate the

problem to achieve greater understanding of the topic at hand. Although questionnaires are important to get data to be able to draw (longitudinal) conclusions, additional research methods could be used to complement findings from the questionnaire. For example, interviews might be helpful to get to know the experiences of adolescents concerning the parenting practices discussed in this thesis. Additionally, parents could be interviewed about their motivation behind implementing certain internet-specific rules or reactive restrictions. However, since the main focus of this thesis was on examining the relationship between internet-specific parenting practices and SMU intensity and the influence of FoMO, as this is a topic that has not yet been studied, a questionnaire seems to bring a good understanding of the topic at hand.

Lastly, using multiple analytical levels in research contributes to a better understanding of the research question. Whereas personal experiences with SMU and FoMO provide crucial information on this topic, it is also important to consider the interpersonal level, for example family and peer dynamics, as these will influence adolescents' personal experiences. Lastly, the societal level as a whole can look at societal trends regarding SMU, and put the issue at hand in the broader context that is important to fully understand it.